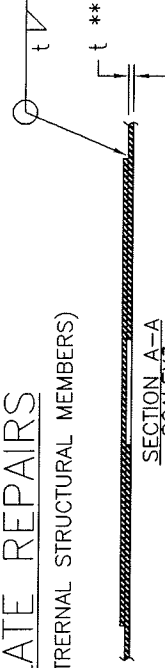


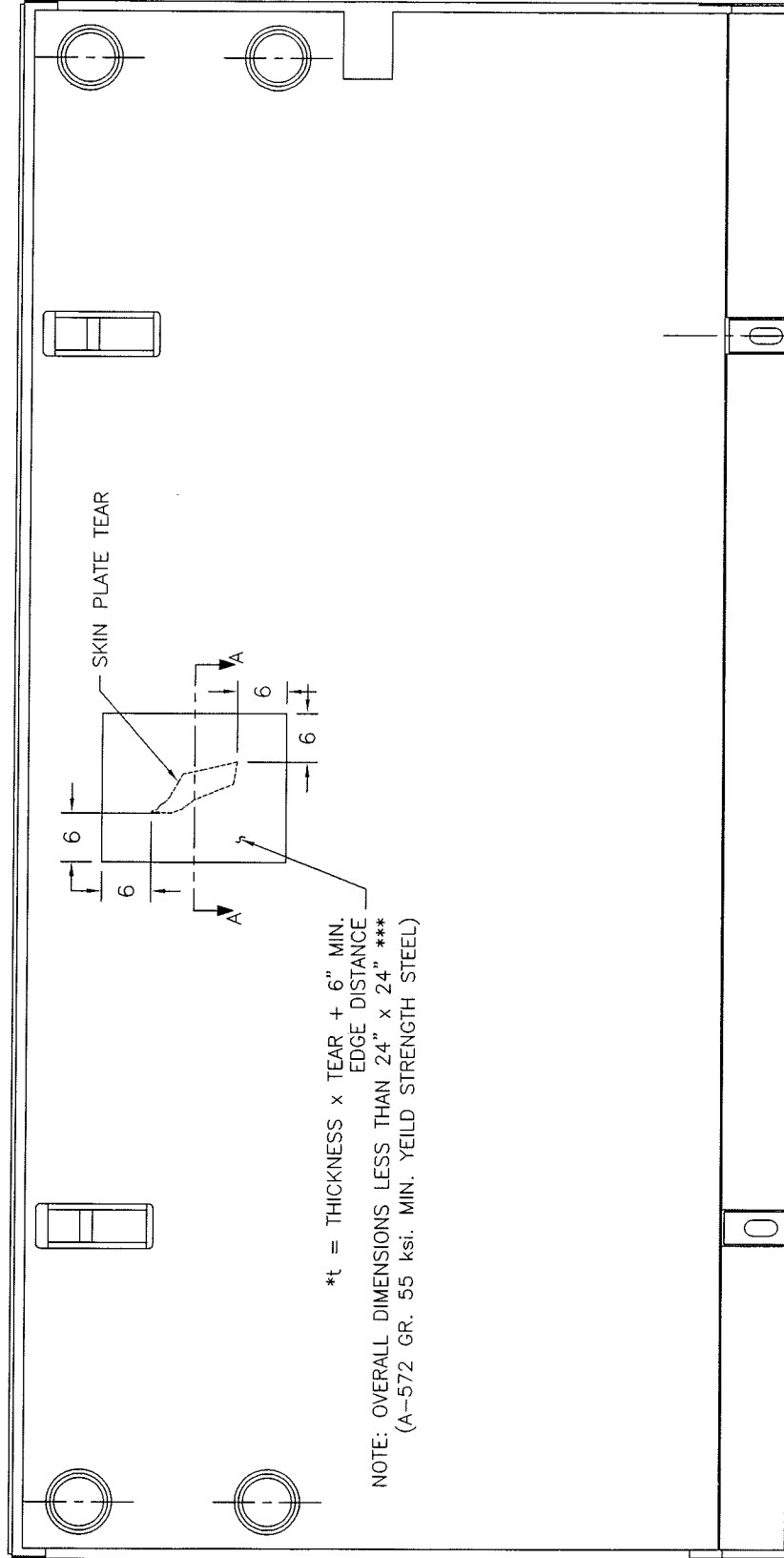
ROUTINE SKIN PLATE REPAIRS

(WHERE NO EVIDENCE OF DAMAGE TO INTERNAL STRUCTURAL MEMBERS)

FULL THICKNESS/CONTINUOUS



SECTION A-A  
SCALE X3



\*t = THICKNESS x TEAR + 6" MIN.  
EDGE DISTANCE

NOTE: OVERALL DIMENSIONS LESS THAN 24" x 24" \*\*\*  
(A-572 GR. 55 ksi. MIN. YIELD STRENGTH STEEL)

**NOTES:**

- \*) MOST CASES  $t=3/16"$  THICKNESS, EXCEPT FOR SOME HD-TRENCH SHIELDS AND SOME SLIDE-RAIL PANELS THAT USE  $1/4"$  THK.
- \*\*\*) CALL MANUFACTURER IF UNCERTAIN, ACCEPTABLE TO INCREASE THICKNESS BY  $1/16"$ .
- \*\*\*\*) CALL MANUFACTURER FOR SIZES GREATER THAN  $24" \times 24"$ .

SEE FILLER METAL REQUIREMENTS PER WPS ATTACHED

ALL TUBING & SKIN PLATE TO BE 55 K.S.I. STEEL

**EFFICIENCY PRODUCTION INC.**

685 HULL RD. MASON MI. 48854 Ph. (517)-676-8800 Fax (517) 676-0373

DATE 7-9-02

DWG. # SHIELD REPAIRS

DRAWN BY J REMACLE

PSF=N/A

S.O.# N/A PAGE:

**SHIELD REPAIR**

**GENERAL SHIELD**

**HOLE REPAIR**

**IN THE FIELD**

FOR FOAM-FILLED SHIELD REPAIR

# STEEB O'CELL

EXPANDED POLYSTYRENE  
**ARVRON, INC.**

4720 CLAY AVE., S.W., GRAND RAPIDS, MI 49548

(616)

## MATERIAL SAFETY DATA SHEET EPS BLOCK AND BOARD MODIFIED

April 20, 1989  
1-616-530-1888  
MICH 1-800-762-8960  
OUTSTATE 1-800-437-0483  
CHEMTREC 1-800-424-9300

### Section I

Chemical Name  
Chemical Family  
Formula

Expanded Polystyrene Foam (EPS)  
Polystyrene Thermal Plastic Polymer  
Modified (C8H8)N with flame retardant  
additive  
9003-53-6 Tasta Inventory Statis  
Listed  
Benzene, Ethenyl, Homopolymer

CAS Registry - Polystyrene -

CAS Name

### Section II - Ingredients

CAS NO.

Approx. WT

#### Hazardous Components

Flame Retarded Halogenated

109-66-0

.2%  
.9%

#### Non-Hazardous Components

Modified - Polystyrene  
External - Lubricants  
Internal - Lubricants  
Modified Material - External Lubricants  
Internal Lubricants  
Surfactants  
Modified Material Surfactants

9003-53-6  
N/A  
N/A  
N/A  
N/A  
N/A  
N/A

.965%  
.8%  
.8%  
.6%  
.6%  
.2%  
.2%

### Section III - Physical Data

Boiling Point  
Solubility in Water  
Specific Gravity  
Percent Volatile by Volume  
Evaporation Rate  
Appearance and Odor

N/A  
None  
Apparent Density 1.0 to 2.0 PCF  
Less than 2%  
N/A  
Rigid Cellular Foam Block or Board  
No Odor



Section IV - Fire and Explosion Hazard Data

Extinguishing Media	Water fog, CO2, dry chemical
Special Fire Fighting Procedures	None
Unusual Fire & Explosion Hazards	May emit large volume of dense, black smoke
Flash Point	675° F
Autoignition	880° F (ASTM-D-1929)

Section V - Health Hazard Data

Threshold Limit Value	None
Effects of Over Exposure	None
Emergency & First Aid Procedures	Eyes - irrigate with water Indigestion, biology, inert, extremely unlikely route

Section VI - Radioactivity Data

Stable	Yes
Incompatibility	Materials to avoid - Hydrocarbons, Carbon, Esters, Insecticides, Amines, Aldehydes
Hazardous Decomposition Products	Carbon Monoxide, Carbon Dioxide, Carbon and Water
Hazardous Polymerization Conditions to Avoid	None Small fires & high temperatures

Section VII - Spill or Leak Procedures

Steps to be taken in case material is released or spilled: Normal good housekeeping should be observed in properly disposing of scrap material.

Waste Disposal Method: Recycle, Incinerate, Landfill with local and state ordinances.

Environmental: Keep from sewer and water ways. Fish may eat and will interfere with digestive systems.

Section VIII - Employee Protection

Respiratory Protection	Dust mask should be worn if saw fabricating
Ventilation	If the product in block or board form is to be fabricated by hot-wire cutting, work areas should be ventilated to avoid a build up of processing fumes
Protective Gloves	None
Eye Protection	Safety glasses recommended to avoid mechanical irritation from dust if saw fabricating

Section IX - Transportation

MSDS for EPS Products are not required by OSHA  
Not listed as a D.O.T. Hazardous Material

**Table 3.1 (Continued)**

G I o u P	Steel Specification Requirements				Filler Metal Requirements			
	Steel Specification <sup>1,2</sup>	Minimum Yield Point/Strength		Tensile Range	Electrode Specification <sup>3,6</sup>	Minimum Yield Point/Strength		Tensile Strength Range
		ksi	MPa	ksi		ksi	MPa	ksi
ASTM A131	Grades AH32, DH32, EH32 Grades AH36, DH36, EH36	46	315	68-85	470-585	SMAW		
ASTM A441		51	350	71-90	490-620	AWS A5.1 or A5.5 <sup>7</sup>		
ASTM A516	Grade 65	40-50	275-345	60-70	415-485	E7015, E7016	60	415 72 min 495
	Grade 70	35	240	65-85	450-585	E7018, E7028		
ASTM A537	Class 1	38	260	70-90	485-620	E7015-X, E7016-X	57	390 70 min 480
ASTM A572	Grade 42	45-50	310-345	65-90	450-620	E7018-X		
ASTM A572	Grade 50	42	290	60 min	415 min			
ASTM A588 <sup>5</sup>	(4 in. and under)	50	345	65 min	450 min			
ASTM A595	Grade A	50	345	70 min	485 min			
	Grades B and C	55	380	65 min	450 min			
ASTM A606 <sup>5</sup>		60	415	70 min	480 min		58	400 70-95 485-660
ASTM A607	Grade 45	45-50	310-340	65 min	450 min			
	Grade 50	45	310	60 min	410 min			
	Grade 55	50	345	65 min	450 min			
ASTM A618	Grades Ib, II, III	55	380	70 min	480 min		60	415 72 min 495
ASTM A633	Grade A	46-50	315-345	65 min	450 min			
	Grades C, D	42	290	63-83	430-570			
	(2-1/2 in. and under)	50	345	70-90	485-620			
ASTM A709	Grade 50	50	345	65 min	450 min			
	Grade 50W	50	345	70 min	485 min			
ASTM A710	Grade A, Class 2 >2 in.	55	380	65 min	450 min			
ASTM A808	(2-1/2 in. and under)	42	290	60 min	415 min			
API 2H <sup>6</sup>	Grade 42	42	290	62-80	430-550			
	Grade 50	50	345	70 min	485 min			
API 5L	Grade X52	52	360	66-72	455-495			
ABS	Grades AH32, DH32, EH32	45.5	315	71-90	490-620			
	Grades AH36, DH36, EH36 <sup>5</sup>	51	350	71-90	490-620			

(continued)

II